GOVERNMENT OF INDIA
SPACE
LOK SABHA

UNSTARRED QUESTION NO:4634
ANSWERED ON:22.04.2015
MOON MISSION
Galla Shri Jayadev

Will the Minister of SPACE be pleased to state:

(a) whether National Aeronautics and Space Administration (NASA) scientists have discovered that interiors of polar crater on the moon contain ice;

(b) if so, the details thereof;

(c) whether Indian Space Research Organisation (ISRO) has discovered water on the moon and if so, the details thereof; and

(d) the conclusion that ISRO arrived at from the above two discoveries?

Answer

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG & PENSIONS AND IN THE PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

a) Yes Madam.

b) NASA's Lunar Reconnaissance Orbiter (LRO) spacecraft launched in June 2009 has detected the spectral signature of hydroxyl, a key indicator that water ice is present in the floor of the crater. The data from the LRO has also indicated that hydrogen bearing molecule deposits may be slightly more abundant on crater slopes in the southern hemisphere that face the lunar South Pole.

c) Yes Madam. The data from the Moon Mineralogy Mapper onboard India's Chandrayaan-1, launched on October 22, 2008 has indicated the presence of hydroxyl and water molecules on the lunar surface. Further, Mini-Synthetic Aperture Radar (Mini-SAR) instrument of Chandrayaan-1 has indicated existence of sub surface water-ice deposits in the base of the craters of permanent sun shadow region. A mass spectrometer based experiment on the Indian Moon Impact Probe (MIP) of Chandrayaan-1 also indicated presence of water molecules in the lunar exosphere.

d) It is concluded from the above results that hydroxyl and water molecules are present on the Moon. The molecules may be more prevalent beneath the lunar surface.